

I claim:

1. Switch apparatus for combining digitized voice signals into large frames, comprising:

a protocol converter/adaptor switch for receiving the incoming digitized voice signals and for compressing the incoming voice signals into digitized voice packets from a plurality of terminals, and for adding a header with packet type and length and channel address;

a compression module for compressing the incoming digitized voice signals into voice packets when the incoming signals are uncompressed and for packaging the compressed digitized voice packets into a format compatible with web protocols;

a bridging module in the switch for packaging the incoming digitized voice signals as compressed voice packets in a format compatible with web protocols when the incoming packets are compressed and for adding a header with packet type and length and channel address; and

a combining/switching module connected to the compression module and to the bridging module within the switch for combining the formatted digitized voice packets into longer frames.

2. An apparatus for sending large frames of digitized packets over a data network, comprising:

a plurality of terminals for transmitting digitized voice signals or compressed data signals;

a switch connected to the terminals for receiving the voice signals and for acting as a protocol converter/adaptor for the incoming digitized voice packets from the plurality of terminals;

lines for connecting each of the plurality of terminals to the switch;

wherein the switch further comprises a compression module for compressing the incoming voice signals into digitized voice packets when the incoming voice signals are uncompressed and for packaging the compressed digitized voice packets into a format compatible with web protocols;

wherein the switch further comprises a bridging module for packaging the incoming compressed digitized data packets into a format compatible with web protocols when the incoming packets are compressed; and

wherein the switch further comprises a combining/switching module within the switch for combining the formatted digitized voice and data packets into longer frames.

3. The apparatus of claim 2, wherein the lines are selected from the group consisting of PSTN lines, PABX lines, LAN lines, Internet lines, and other lines.

4. An apparatus for sending digitized voice over a data network, comprising:

a plurality of terminals for transmitting digitized signals, wherein the digitized signals may be compressed and uncompressed;

a plurality of switches for receiving the digitized signals and for acting as a protocol converter/adaptor for the incoming signals from the plurality of terminals;

first lines for connecting the plurality of terminals to at least one of the plurality of switches;

wherein each of the plurality of switches further comprises a compression module for compressing the incoming voice signals to digitized voice packets when the incoming voice signals are uncompressed and for packaging the compressed digitized data packets in a format compatible with web protocols;

wherein each of the plurality of switches further comprises a bridging module for packaging the incoming digitized data packets into a format compatible with web protocols when the incoming packets are compressed;

wherein each of the plurality of switches further comprises a combining/switching module within the switch for combining the formatted digitized voice packets into long frames;

a data network for receiving the long frames from the plurality of switches;

a second line for connecting the plurality of switches to the data network; and

a central switch for receiving the longer frames from the data network and for disassembling, switching and reassembling the longer frames and for returning the reassembled frames to the data network.

5. The apparatus of claim 4, wherein the first lines are selected from the group consisting of PSTN lines, PABX lines, LAN lines, Internet lines, and other lines.

6. The apparatus of claim 4, wherein the second lines are selected from the group consisting of ethernet lines, V35 lines, G704 lines, and other lines.

7. The apparatus of claim 4, wherein the data network is selected from the group consisting of an Internet protocol (IP) network, a frame relay network, an X25 network, a leased line network, and other networks.

8. A method for combining incoming digitized voice packets into longer frames, comprising:

receiving incoming voice and data signals;
compressing the incoming voice signals to digitized data packets when the incoming voice signals are uncompressed;
packaging the compressed digitized voice packets into a format compatible with web protocols;
bridging the incoming data signals to digitized data packets when the incoming digitized data signals are compressed;
packaging the bridged digitized data packets into a format compatible with web protocols;
combining the formatted digitized data packets into first long frames; and

transmitting the first long frames over a data network.

9. The method of claim 8, further comprising,
receiving the first long frames in a central node switch;

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disassembling the formatted data packets from the first long frames;

assembling the disassembled data packets into second long frames; and

transmitting the second long frames to switches.

10. A method for sending digitized packets over a data network, comprising:

receiving incoming voice signals from a plurality of telephones and receiving compressed data signals from computers in a lesser plurality of switches;

compressing the incoming voice signals into digitized data packets, when the incoming voice signals are uncompressed;

packaging the compressed digitized data packets into a format compatible with network protocols;

bridging the incoming digitized data signals into digitized data packets, when the incoming digitized data signals are compressed;

packaging the bridged digitized data packets into a format compatible with network protocols;

combining the formatted digitized data packets into first long frames;

sending the first long frames from the plurality of switches to a data network;

sending the first long frames from the data network to a central switch;

disassembling the formatted data packets within the first long frames in the central switch;

reassembling the formatted data packets into second long frames in the central switch; and sending the reassembled frames from the central switch through the data network and the plurality of switches to the telephones and computers.

11. The method of claim 10, wherein the combining the formatted digitized data packets into the first long frames further comprises adding a 4-byte control information header to each of the digitized data packets prior to combining the digitized voice packets.

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